

## **REMARKS**

This is in response to the non-final Office Action mailed June 8, 2006. Claims 1-27 and 29 are now pending and all claims have been rejected by the Examiner. In this response, Claims 27 and 29 have been amended. The amendment of these claims is believed to be supported in the original disclosure. No other claims have been changed. Reconsideration of the above-referenced rejection of Claims 1-27 and 29 is hereby requested in view of the following remarks and the amendment of Claim 27 and 29.

The Examiner also objected to reference of co-pending applications because of omission of their Application Numbers. Applicants have modified the Related Applications portion of this specification to include the previously omitted patent application numbers. Removal of this objection is now respectfully requested in view of this change.

The Examiner has rejected Claims 27 and 29 under 35 USC 101 as not being limited to tangible mediums. Applicants have modified the claims to include the word tangible to describe the medium of the claims, although Applicants do not necessarily agree that cited transmission mediums are not tangible. Applicants respectfully suggest that this removes the Examiner's 35 USC 101 rejection, and respectfully request allowance of these claims.

The Examiner has rejected Claims 1-27 and 29 under 35 USC 102 as being anticipated by Ofek et al. (US Patent 6,487,561 B1) ("Ofek"). The Examiner's 102 rejection of Claims 1-27 and 29 is respectfully traversed based on the arguments herein.

A claim is anticipated under U.S.C. § 102 only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed.

Cir. 1987); as cited in MPEP §2131. "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). Applicants respectfully submit that there is at least one element in the rejected claims which is not set forth in the Ofek reference, either explicitly or inherently, and therefore it does not teach or suggest every aspect of the current invention.

Applicants' invention, as specified in Claim 1, is directed at combining the advantages of SAN networks, such as providing the advantages of reliability, maintainability, and being scaleable while eliminating the problems managing these networks. The current invention specified in Claim 1 does this by combining an intelligent multi-protocol switch (IMPS) with a storage and switch controller including at least one microprocessor and a disk array for storing meta-data related to the plurality of data storage volumes such that the one or more data storage networks are managed by the controller using the meta-data and by interacting with the IMPS.

Applicants note that the Examiner has provided one argument and rejection for all corresponding program product, method, apparatus, and system claims in the current Office Action. For the sake of simplicity, Applicants respond with one argument as to why the corresponding claims are allowable; however, Applicants respectfully point out that each of these types of claims are separately patentable over each other similar corresponding claim.

**Claim 1, 14, 17, 29**

Applicants respectfully disagree with the Examiner's assertion that Ofek teaches the invention of Claim 1, 14, 17, or 29.

Applicants' Claim 1 states:

"A system for managing a plurality of storage area networks including a plurality of data storage volumes and one or more hosts, the system comprising:  
an intelligent multi-protocol switch (IMPS) combined with a storage and switch controller including at least one microprocessor and a disk array for storing meta-data related to the plurality of data storage volumes such that the one or more data storage networks are managed by the controller using the meta-data and by controlling the IMPS."

Applicants respectfully disagree that Ofek discloses an intelligent multi-protocol switch (IMPS). First, the Ofek reference does not, in general or at the Examiner's citation, explicitly, implicitly, or inherently disclose an IMPS. The Ofek reference also does not explicitly disclose a switch; only referring to a switched network. The mere presence of a switched network does not imply the presence of an IMPS. Further, as discussed below it does implicitly nor inherently disclose an IMPS used as specified in Applicants' claimed invention.

The current invention claims an intelligent multi-protocol switch (IMPS). An IMPS is a type of switch that can handle multiple protocols such Fibre Channel and/or SCSI. An IMPS also has the capabilities to run software programs and control programs, as claimed at least in Applicants' dependent claims (see for example, Claim 2). In Figure 7 of Applicants' specification, the IMPS of Applicants' invention has a SAL agent, an IMPS API, and an IMPS

operating system, which enable the intelligence and communications capabilities of the IMPS. There is no disclosure, express or inherent, in Ofek of an IMPS switch capable of handling many different types of protocols, nor that the Ofek-disclosed switch is capable of running software functioning with the intelligence or communications capability of Applicants' claimed IMPS.

Rather, Ofek discloses a switched network, but does not provide a definition of a switched network. This would infer that Ofek has no more than a type of switch used for connectivity, in essence doing little more than creating simple electronic circuits connecting computers and other devices to each other. Ofek's disclosure of a switching element for connectivity does not anticipate Applicants invention that specifies an intelligent multi-protocol switch and control of the IMPS as claimed by Applicant.

Other elements claimed by Applicant are also not disclosed by Ofek. For example, at no point does Ofek mention or suggest a "storage and switch controller including at least one microprocessor and a disk array for storing meta-data related to the plurality of data storage volumes such that the one or more data storage networks are managed by the controller using the meta-data and by controlling the IMPS" Applicants' respectfully suggest that the Examiner's assertion that Ofek's discloses these claimed elements is based on a mischaracterization of Ofek's elements. First, referring to the Examiner's cited references in Ofek for this device, Applicants find only references to a switch network, a switched network, and switching nodes. In such Ofek's disclosed reference to a network, there is not an inference or requirement of a storage and switch controller as specified by Applicants. Ofek's network reference merely implies the presence of a switch, not that of a storage and switch controller. A switch in a switch

network as disclosed by Ofek is merely an autonomous entity that routes connections from one device to another without the need of an external controller.

The current invention, as seen in Figure 1, has an IMPS and storage and switch controller. The storage and switch controller in Claim 1 is further defined to include “at least one microprocessor and a disk array for storing meta-data related to the plurality of data storage volumes.” The Ofek reference does not include or imply the presence of such a device that controls a switch, and clearly does not include Applicants’ claimed IMPS type switch. Referencing the Examiner’s quote, Column 21 Line 50-Column 22 Line 37, the controller disclosed in Ofek is not a storage and switch controller and is not disclosed to include “at least one microprocessor and a disk array for storing meta-data related to the plurality of data storage volumes.” The mere inclusion of the phrase that the controller “may be any hardware, or hardware and software, combination capable of performing the requisite functions . . . may be a computer running a windows NT operating system” does not disclose said storage and switch controller. In this citation, the controller is only a storage controller, not a storage and switch controller, this citation does not state it includes a disk array, and it does not use meta-data. The mere possibility or probability that such a controller might but does not inherently include such devices is not sufficient for a 102 rejection.

Applicants also respectfully disagree with the Examiner’s assertion that Ofek discloses the combination of an “IMPS” with “a storage and switch controller including at least one microprocessor and a disk array.” Ofek does not disclose these components and therefore can not have such a combination. Also, the Examiner does not cite a portion of Ofek suggesting a combination of the individual elements that Ofek does disclose. At the Examiner’s citation,

Column 9 Lines 2-6, and at Column 14 Lines 25-28, and Lines 45-59, there is no mention of combining any switch, much less an intelligent multi-protocol switch (IMPS), with a storage and switch controller.

Applicants respectfully disagree that Ofek teaches that the “data storage networks are managed by the controller using the meta-data and by controlling the IMPS.” As stated above, Ofek does not disclose a plurality of data storage networks and therefore can not have a controller to manage a plurality of these networks. While Ofek discloses a controller, the controller is not a storage and switch controller and does not use meta-data to manage the network and does not control a switch. Rather, the meta-data in Ofek is used only to reconstruct the order of logical blocks.

Ofek is concerned with mapping physical and logical drive to each other. This means Ofek needs a way to link the physical drive structure to the logical drive structure. Specifically Ofek states at Column 20 Lines 59-64, that a pure physical copy may not preserve the logical relationship between data blocks. Therefore, Ofek creates an “abstract block” through the use of metadata that corresponds to the data as well as any information carried in the logical level. This allows Ofek to reconstruct the logical structure of blocks after they have been saved or transferred between devices. This meta-data contains information only about the data stored and does not contain information on how to manage a SAN or a plurality of SANs and Ofek does not attempt to use this data to manage a plurality of SANs.

Conversely, in Applicants’ specification, “the [storage and switch] controller using the meta-data” manages the data storage networks. This means that there is information in the meta-data that is used to manage the network and the storage and switch controller uses this

information. For example, Applicants' specification states that "the meta data includes configuration information that identifies the components of the instance, for example, the identities of the intelligent switches that make up the instance, data describing the set of exported virtual volumes, the software for the Controller, information describing what hosts and initiators are allowed to see what volumes, etc." (2<sup>nd</sup> sentence, third paragraph, page 17). This type of information is not present in the Ofek disclosure and Ofek's disclosed controller does not use his information to manage a plurality of SANs, so that Ofek's controller is different from Applicants' claimed controller.

Applicants respectfully disagree that Ofek teaches a system for managing a plurality of storage area networks (SANs). The Ofek invention discloses a method of data copying, backing-up, and restoring data in a network setting. Specifically, Ofek is for managing the mapping from a logical to a physical drives within a network or SAN. As Ofek's application runs within a single SAN, Ofek does not disclose or suggest a plurality of SANs. As Ofek does not disclose a plurality of SANS, Ofek does not and can not provide a method to manage a plurality of SANs.

In this rejection, the Examiner did not cite to any such reference within Ofek to disclose or suggest "managing" of "a plurality of storage networks" and no such reference exists, either inherently or explicitly within Ofek. Ofek refers to the word manage only in conjunction with processes that work within a single SAN. That is, Ofek is concerned only with managing an application within a local SAN. For example, Ofek discloses a Logical volume manager, array management software, cache management, and hierarchical storage management. All these applications are particular management applications that are used to distribute management functions within a SAN. Ofek's methodology is exactly what makes management of multiple

SANs hard, there is no central control and each management process is distributed. This is exactly the problem that the current invention fixes in providing a method for managing a plurality of SANs.

As a result, Ofek does not disclose a plurality of SANs, rather only a single network or SAN and this is evidenced by Ofek's repeated reference a single network or storage domain. For example, at Column 17 Lines 37-43 Ofek says part of his invention is for "managing manipulation of storage within the storage domain." At Ofek Column 19 Lines 53-57, where it is stated that it "distribute[d]s across . . . the storage domain." At Column 17 Lines 48-50 where Ofek states "backup and copying processes in the storage domain." At Column 14 Lines 5-6 Ofek states that his invention is concerned with "movement of logical data across a network," or at Column 12 Line 47 in the description of Figure 8 "interfacing with the storage network." This clearly implies there is only one network and not a plurality of networks or storage area networks (SANs).

This is important because there are complexities present with the management of a plurality of SANs that are not present within a single SAN. Ofek discloses an application that could be used use within a single network or SAN for the copying, transferring and back-up of data. Particularly, Ofek is concerned with mapping physical to logical drives as his invention provides a method to allow "copied, backed up or restored in segments sizes larger than the data blocks which comprise a logical object." The current invention provides a platform to manage the operations of multiple SANs, which could include managing or running an application such as Ofek.



Ofek's application comports with current SAN management, where each SAN manages itself. This is shown in the Ofek disclosure in Column 3 Lines 42-49 where "localized array management software" manages the array. In Ofek, control for any process rests at the local SAN level and if Ofek's application were run on multiple SANs, each SAN would be individually managed. This methodology is contrasted to the current invention which manages SANs at a more central level. The Ofek reference discloses management at the distributed local level and has the limitations of current SAN systems, e.g. they are hard to centrally manage.

In asserting that Ofek discloses "managing a plurality of SANS," Applicants assert that the Examiner may have mischaracterized a plurality of SANs with a SAN having a plurality of data storage volumes and one or more hosts. A plurality of SANs and a SAN with a plurality of data storage volumes and one or more hosts are not equivalent. Claim 1 clearly states a plurality of data storage area networks (SANs) including a plurality of data storage volumes and one or more hosts. This requires that there be a plurality of SANs and they include the plurality of other devices.

In the current invention, there is a notable advantage over the prior art. The current invention reduces the complexity of managing multiple SANs. Therefore, regardless of the devices the Examiner asserts are present in a reference, the configuration and function of these devices must also be considered. Further, without expressly or inherently disclosing the current invention, the Examiner can not properly use Ofek for a 102 rejection. Applicants respectfully suggest that the Examiner has not considered the function of the current invention or the configuration of the devices within the current invention.

The embodiment of the present invention in the specified architecture allows storage administrators to manage the components of their SAN infrastructure without interrupting the services they provide to their clients. This enables a centralization of management allowing the storage infrastructure to be managed without requiring host-based software or resources for this management, where such resources to perform this management is required within the Ofek system.

For example, data storage volumes can be restructured and moved across storage devices on the SAN while the hosts accessing these volumes continue to operate undisturbed (Page 10 first full paragraph). Management of resources can also be moved off of storage arrays themselves, allowing for more centralized management of heterogeneous data storage environments (Page 10, second full paragraph).

The Examiner cites no different points of rejections for Claims 14, 27, or 29 as compared with Claim 1. Applicants respectfully incorporate the arguments presented to remove the rejections placed on Claims 14, 27, and 29 as well. Also Claims 2-14 depend from Claim 1 and Claims 15-26 depend on Claim 14. Allowance of either Claim 1 or Claim 14 would place their respective dependant claims in condition for allowance for at least the same reasons for allowance as the independent claim. Based on the foregoing arguments, Applicants respectfully request removal of these 102 rejections and allowance of Claims 1, 14, 27, 29, and all subsequent dependant claims.

## Claims 2 and 15

Applicants' Claim 2 states:

"The system of claim 1, wherein execution of software running on the IMPS and the storage and switch controller forms an instance of storage area network management that is separate from a host or the plurality of data storage volumes."

Applicants incorporate the aforementioned arguments and argue that as Ofek does not disclose the invention of Claim 1, it can not disclose the device of Claim 2 "wherein execution of software running on the IMPS and the storage and switch controller forms an instance of storage area network management that is separate from a host or the plurality of data storage volumes." Specifically, Ofek does not teach an IMPS and Applicants assert Ofek therefore can not teach any software on a device that is not disclosed. Applicants suggest that the Examiner's rejection is based on an incorrect characterization of the elements present in Ofek.

The two Ofek references the Examiner cites for this rejection there are two different types of "software" and neither are the same of the type or function referred to in Claim 2. The first type of software is "array management software" (Column 3 Line 32-66). Ofek's array management software is software that is used to manage an array of drives within a storage system. This is a local logical drive management system and not used for management of a plurality of SANs.

The second type of software, Column 19, Lines 17-52, is a storage management application (SMAPP). Ofek's SMAPP software is concerned with managing the transfer of data for copying and back-up purposes, Column 19, Lines 17-52 and Column 18 Lines, Lines 20-35. This is not software that used to manage a plurality of SANs nor is this software used to

“interfacing with an application program interface for the IMPS.” Ofek’s “management of the hardware and media” might be management of a plurality of devices, which, as noted above, is not the same as managing a plurality of SANs. Also, as asserted above, the Ofek reference does not disclose an IMPS and therefore it is unwarranted to assert that any software in Ofek interfaces with an IMPS.

The Examiner cites no different points of rejections for Claim 15 as compared with Claim 2. Applicants respectfully incorporate the arguments presented to also remove the rejection placed on Claim 15. Therefore, based on this and the foregoing arguments Applicants request removal of the rejection of Claims 2 and 15 and all subsequent dependant claims under 35 USC 102 and further request allowance of these claims.

### **Claims 3 and 16**

Applicants’ Claim 3 states:

“The system of claim 2, wherein the controller includes software components for interfacing with an application program interface for the IMPS.”

Applicants incorporate the above arguments and respectfully disagree that Ofek teaches a system wherein the controller includes software components for interfacing with an application program interface for the IMPS. Applicants suggest that the Examiner’s rejection may be based on a mischaracterization of Ofek’s elements. First, Ofek does not teach an IMPS or a storage and switch controller and therefore can not teach software for use with elements that are not disclosed. Second, the reference provided by the Examiner, Column 19, Lines 17-52, refers to a portion of the Ofek methodology that deals solely with a back-up process. Specifically, Ofek refers to the act of backing up data in a computer network. Backing up data is clearly not the

same as managing a plurality of SANs nor is it the same as interfacing with an IMPS. Therefore, Ofek does not explicitly, implicitly, or inherently disclose the elements of Claim 2.

The Examiner cites no different points of rejections for Claims 16 as compared with Claim 3. Applicants respectfully incorporate the arguments presented to remove the rejections placed on Claim 16 as well. Based on the foregoing arguments, Applicants respectfully request removal of these 102 rejections for Claims 3, 16, and all subsequent dependant claims as well as requesting allowance of these claims.

#### **Claims 4 and 17**

Applicants' Claim 4 states:

“The system of claim 1, wherein the plurality of storage area networks are represented by a plurality of virtual storage area networks.”

Applicants incorporate the aforementioned arguments and further respectfully assert that Ofek does not teach a system wherein the plurality of storage area networks are represented by a plurality of virtual storage area networks. As previously stated, Ofek does not disclose a plurality of SANS. As such, Applicants assert Ofek can not present a management system for a plurality of SANs. As Ofek does not provide a method to manage SANs, it can not provide a method to manage a plurality of virtual SANs. Further, at no place in the Ofek reference is a virtual SAN disclosed. Applicants suggest that the Examiner's rejection is based on a mischaracterization of the elements present in Ofek.

Applicants assert the Examiner did not appreciate the definitions of a virtual SAN and plurality of virtual SANs and confused this with the meaning of a virtual device. The Ofek reference uses the phrases virtual volume, virtual disk, virtual channel, virtual circuit, and virtual

partition. A virtual disk or volume, in Ofek, is a way of describing the operating system's view of a storage device structure that may not correspond to the actual physical storage system implementing the structure. Ofek's virtual partition is a partition of a virtual volume or disk. Ofek's virtual circuit is a method of establishing a physical connection between the nodes, the virtual circuit identifies a session for copying a series of data (comprising, e.g., the logical object) over the identified connection. Ofek's virtual channel appears to use Ofek's virtual circuit to perform the back-up process. Conversely, the current disclosure uses an IMPS to support virtual SANs (VSANs) by parsing between front-end SAN's and back-end SAN's even if such SAN's are not physically configured. In general, IMPSs that support VSANs allow a shared storage area network to be configured into separate logical SANs providing isolation between the components of different VSANs. Ofek provides no such definition of a VSAN.

Therefore a Virtual Storage Area Network, using an IMPS and composed of virtual or physical devices, is different than any virtual device disclosed in Ofek. As a result, the Ofek reference does not mention of a virtual SAN or a plurality of virtual SANs. Therefore, as Ofek does not teach or suggest a virtual SAN or a plurality of virtual SANs, it can not be used to support a valid 102 rejection of Claim 4.

The Examiner cites no different points of rejections for Claim 17 as compared with Claim 4. Applicants respectfully incorporate the arguments presented to remove the rejection placed on Claim 17 as well. Based on the foregoing arguments, Applicants respectfully request removal of these 102 rejections for Claims 4, 17, and all subsequent dependant claims as well as allowance of these claims.

## **Claims 5 and 18**

Applicants' Claim 5 states:

"The system of claim 4, wherein the plurality of virtual storage area networks includes a plurality of virtual storage volumes."

Applicants incorporate the previous arguments and stress that for there to be virtual storage volumes incorporated into virtual SANs there must first be virtual SANs. As previously argued, Applicants assert that there are no virtual storage networks in the Ofek disclosure and therefore it is unwarranted to assert virtual storage devices can be incorporated into an element that is not disclosed in Ofek. Applicants assert that the Examiner's rejection is based on a mischaracterization of the elements present in Ofek.

The Examiner cites no different points of rejections for Claim 18 as compared with Claim 5. Applicants respectfully incorporate the arguments presented to remove the rejection placed on Claims 18 as well. Based on the foregoing arguments, Applicants respectfully request removal of these 102 rejections of Claims 5, 18, and all subsequent dependant claims as well as allowance of these claims.

## **Claims 6, 10, 19, and 23**

Applicants' Claim 6 states:

"The system of claim 1, wherein a switch abstraction layer software on the controller is provided for managing the IMPS."

Applicants incorporate the aforementioned arguments and further assert that Ofek does not provide an abstraction layer, a switch abstraction layer, an IMPS, or switch management software. Applicants assert that the Examiner's rejection of this claim is based on a

mischaracterization of the elements present in Ofek. Referring to the Examiner's quote of Column 1 Lines 39-57, Ofek describes a method of abstraction that is commonly used to describe an operating system. This is not a level of abstraction for a piece of software nor is it a level of abstraction for a switch. Ofek presents a level of abstraction so humans may more simply view and conceptualize the layers of an operating system. This abstraction level is not used to interact with the hardware system or a switch. Also, the Ofek reference does not mention a switch or switch management.

Applicants believe the Examiner's second quote, Column 4 Lines 17-21, bears no relation to this claim as it deals with a map of a storage device. It does not mention a switch, a level of abstraction, or an IMPS.

The Examiner cites no different points of rejections for Claims 10, 19, and 23 as compared with Claim 6. Applicants respectfully incorporate the arguments presented to also remove the rejection placed on Claims 10, 19, and 23. Therefore, based on this and the foregoing arguments Applicants request removal of the rejection of Claims 6, 10, 19, 23, and all subsequent dependant claims under 35 USC 102 as well as allowance of these claims.

#### **Claims 7, 11, 20, and 24**

Applicants' Claim 7 states:

"The system of claim 6, wherein a software agent is provided on the IMPS for interfacing with the switch abstraction layer through an application program interface."

Applicants incorporate the aforementioned arguments and again assert that Ofek does not provide a switch abstraction layer, an IMPS, switch management software, or a software agent



provided on the IMPS. As mentioned above, there is no such disclosure of these elements either explicitly or implicitly. Further, the Examiner does not cite to any reference that could imply any of the aforementioned elements. The Examiner's first citation, Column 1 Lines 39-57, refers only to a standard way of storing data across operating systems. The Examiner's second citation, Column 4 Lines 17-21, refers only to a method of mapping physical and logical drives. Neither of these citations relates to a software agent provided for running on the IMPS. Applicants assert that the Examiner's rejection is unwarranted and based on a mischaracterization of the elements present in Ofek.

The Examiner cites no different points of rejections for Claims 11, 20, and 24 as compared with Claim 7. Applicants respectfully incorporate the arguments presented to also remove the rejection placed on Claims 11, 20, and 24. Therefore, based on this and the foregoing arguments Applicants request removal of the rejection of Claims 7, 11, 20, 24, and all subsequent dependant claims under 35 USC 102 as well as request allowance of these claims.

**Claims 8, 12, 21, and 25**

Applicants' Claim 8 states:

"The system of claim 7, wherein the plurality of storage area networks are represented by a plurality of virtual storage area networks."

Applicants incorporate the aforementioned arguments and further assert that Ofek does not disclose wherein the plurality of storage area networks are represented by a plurality of virtual storage area networks. As argued above, Ofek does not disclose a plurality of SANs nor a plurality of virtual SANs. Since Ofek discloses neither of these elements, it is unwarranted for the Examiner to assert Ofek discloses combination of elements that have not been disclosed.

Applicants assert that the Examiner's rejection is based on a mischaracterization of the elements present in Ofek.

The Examiner cites no different points of rejections for Claims 12, 21, and 25 as compared with Claim 8. Applicants respectfully incorporate the arguments presented to also remove the rejection placed on Claims 12, 21, and 25 and all subsequent dependant claims. Therefore, based on this and the foregoing arguments Applicants request removal of the rejection of Claims 8, 12, 21, 25, and all subsequent dependant claims under 35 USC 102 and further request allowance of these claims.

**Claims 9, 13, 22, and 26**

Applicants' Claim 9 states:

"The system of claim 8, wherein the plurality of virtual storage area networks includes a plurality of virtual storage volumes"

Applicants incorporate the aforementioned arguments and further assert that since Ofek does not disclose a plurality of virtual SANs, it is unwarranted for the Examiner to assert that Ofek specifies the make-up of an element that Ofek does not disclose. Applicants assert that the Examiner's rejection of this claim is based on a mischaracterization of the elements present in Ofek.

The Examiner cites no different points of rejections for Claims 13, 22, and 26 as compared with Claim 9. Applicants respectfully incorporate the arguments presented to also remove the rejection placed on Claims 13, 22, and 26. Therefore, based on this and the foregoing arguments Applicants request removal of the rejection of these claims under 35 USC 102 and request allowance of these claims.

Applicant: Fernando Oliveira, *et al.*  
U.S.S.N.: 10/810,988  
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## Conclusion

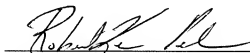
In view of the foregoing, the applicants' believe that the application is in condition for allowance and respectfully request favorable reconsideration.

In the event the Examiner deems personal contact desirable in the disposition of this case, the Examiner is invited to call the undersigned attorney at (508) 293-6985.

Please charge all fees occasioned by this submission to Deposit Account No. 05-0889.

Respectfully submitted,

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